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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CHU, KIM KWOK

ART UNIT PAPER NUMBER

2627

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/13/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 04/13/2007.

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Office Action Summary

Application No.

10/623,654

Applicant(s)

HONG ET AL.

Examiner

Kim-Kwok CHU

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed on 2/28/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-23, 28-34, 37-41 and 46-50 is/are rejected.
- 7) ☒ Claim(s) 24-27, 35, 36 and 42-45 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Response to Remarks

1. Applicant's Amendment and Remarks filed on February 28, 2007 have been fully considered. Furthermore, certified copies of foreign priority applications are received. The prior art of Joo et al. has a filing data of August 30, 1999, which is later than any of the claimed priority documents. A newly found reference of Nakane et al. (U.S. Patent 5,933,410) is cited as a prior art to Applicant's Claims 21-23, 28-34, 37-41 and 46-50.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless --
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.*

3. Claims 21-23, 28-34, 37-41 and 46-50 are rejected under 35 U.S.C. § 102(e) as being anticipated by Nakane et al. (U.S. Patent 5,933,410).

4. Nakane teaches a method for controlling a servo operation of an optical recording medium having all of the steps as

recited in claims 21-23, 28-34, 37-41 and 46-50. For example, Nakane teaches the following steps:

(a) with respect to Claim 21, the optical recording medium 101 (Fig. 9) including a non-writable area (prepit area) having a plurality of header fields (PID1-PID4) with at least one header field PID1, PID2 staggered with respect to another header field PID3, PID3 (Figs. 1 and 3), determining a difference between a first synchronization reference signal vfo1 included in the one header field PID1 and a second synchronization reference signal vfo3 included in the another header field PID3 (Figs. 10 and 11; abstract, last six lines; and a control step for controlling the servo operation (land/groove tracking) of the optical recording medium 101 based on the determined difference in the above determining step (Fig. 9; differential amplifier 131 provides VFO difference outputs).

(b) with respect to Claim 22, the first and second reference signals vfo1, vfo3 respectively correspond to read channel signals obtained from the one header field and the another header field, the read channel signals corresponding to a difference between reflected signals obtained by a split photodetector 115 (Figs. 9; different signals such as vfos from PID1 and PID3 are detected in an optical head by a split photodetector 115).

(c) with respect to Claim 23, the first and second reference signals vfo1, vfo3 comprise VFO (Variable Frequency Oscillator) signals (Figs. 10 and 11).

(d) with respect to Claim 28, the plurality of header fields include at least first, second, third and fourth header fields PID1-PID4, and the one header field corresponds to the first header field and the another header field corresponds to the third header field in which the first header field is staggered with respect to the third header field (Fig. 3).

(e) with respect to Claim 29, the determined difference between the first and second reference signals vfo1, vfo3 corresponds to a level difference between the VFO signal of the first header field PID1 and the VFO signal of the third header field PID3 (Figs. 10 and 11).

(f) with respect to Claim 30, the step of determines the difference between the first and second reference signals vfo1, vfo3 by comparing a potential difference between a track center and the VFO signal of the first header field PID1 with a potential difference between the track center and the VFO signal of the third header field PID3 (Figs. 9-11).

(g) with respect to Claim 31, the step of determines the difference between the first and second reference signals vfo1, vfo3 by comparing a potential difference between a ground level and the VFO signal of the first header field PID1 with a

potential difference between the ground level and the VFO signal of the third header field PID3 (Figs. 9-11; vfo signal is measured based on a ground reference).

(h) with respect to Claim 32, the first and second reference signals vfo1, vfo3 are a peak-to-peak value of the corresponding VFO signal (Figs. 10 and 11).

(i) with respect to Claim 33, the first and second reference signals vfo1, vfo3 are at least one from a bottom holding signal and a peak holding signal of the corresponding VFO signal (Figs. 10 and 11; vfo signal is a pulse having peak and bottom value).

(j) with respect to another Claim 34, the first and second reference signals vfo1, vfo3 are a hold (stored) signal of a center of the corresponding VFO signal (Figs. 10 and 11; vfo signals are compared continuously in all ranges).

(k) with respect to Claim 35, the step of controlling further comprises comparing the determined difference of the first and second reference signals with a threshold value (Figs. 10 and 11; vfos are compared either it is positive or negative).

(l) with respect to Claim 37, the plurality of header fields 33-40 include at least first, second, third and fourth header fields in which the first and second header fields PID1,

PID2 are staggered with respect to the third and fourth header fields PID3, PID4 (Fig. 4).

(m) with respect to Claim 38, the step of determines a difference between a first signal detected from the first and second header fields and a second signal detected from the third and fourth header fields, and the step of controls the servo operation of the optical recording medium 101 based on the determined difference between the first and second detected signals (Figs. 9-11).

(n) with respect to Claim 39, the first reference signal vfo1 corresponds to a signal read from the first header field PID1, the second reference signal vfo2 corresponds to a signal read from the second header field PID2, a third reference signal vfo3 corresponds to a signal read from the third header field PID3, and a fourth reference signal vfo4 corresponds to a signal read from the fourth header field PID4, and wherein the first signal detected from the first and second header fields is based on the first and second reference signals, and the second signal detected from the third and fourth header fields is based on the third and fourth reference signals (Figs. 9-11).

(o) with respect to Claim 40, the first, second, third and fourth reference signals vfo1-vfo4 comprise VFO (Variable Frequency Oscillator) signals (Fig. 3).

(p) with respect to Claim 41, the first, second, third and fourth VFO signals vfo1-vfo4 correspond to read channels obtained from the first, third, second and fourth header fields, respectively, the read channels corresponding to a difference between reflected signals obtained by a split photo detector 115 (Figs. 3 and 9).

5. Claims 46-48 have limitations similar to those treated in the above rejection, and are met by the reference as discussed above.

6. Claim 49 has limitations similar to those treated in the above rejection, and is met by the reference as discussed above.

7. Claim 50 has limitations similar to those treated in the above rejection, and is met by the reference as discussed above.

Allowable Subject Matter

8. Claims 24-27, 35, 36 and 42-45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

As in claims 24 and 42, the prior art of record fails to teach or fairly suggest an information recording apparatus having the following feature:

(a) to compensate the radial tilt based on the determined difference between the first and second reference signals.

As in claim 36, the prior art of record fails to teach or fairly suggest an information recording apparatus having the following feature:

(a) to compensate the radial tilt based on the compared difference is larger than the threshold value.

The features indicated above, in combination with the other elements of the claims, are not anticipated by, nor made obvious over, the prior art of record.

10. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kim CHU whose telephone number is (571) 272-7585 between 9:30 am to 6:00 pm, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington, can be reached on (571) 272-4483.

The fax number for the organization where this application or proceeding is assigned is (571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished application is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9191 (toll free).

Kim-Kwok CHU *6/4/07*
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